

[METHODS AND SYSTEMS FOR RESISTIVITY ANISOTROPY FORMATION ANALYSIS]

Abstract

Techniques for determining a formation property by simplifying various two-geological-layer or multi-geological-layer models into a multi-electrical-layer model. A volume fraction of a layer in a multi-electrical-layer model is determined for an anisotropic region (sliding window) of the formation. The multi-electrical-layer electrical model includes a relative-lower-resistivity layer and a relative-higher-resistivity layer. A high-resolution resistivity measurement is used in the determination and resistivities for the relative-lower-resistivity layer and for the relative-higher-resistivity layer based on the volume fraction and bulk resistivity measurements of the anisotropic region are determined. The formation property is based on the volume fraction, the resistivity of the relative-lower-resistivity layer, the resistivity of the relative-higher-resistivity layer, a total porosity of the anisotropic region, and bulk resistivity measurements of the region.